

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A multiplexer comprising:
 - a first input;
 - a first differential amplifier of a first channel, the first differential amplifier including a first differential pair of transistors coupled to the first input;
 - a second input;
 - a second differential amplifier of a second channel, the second differential amplifier including a second differential pair of transistors coupled to the second input;
 - an output;
 - a first plurality of selection transistors coupled between the first differential pair of transistors and the output; and
 - a second plurality of selection transistors coupled between the second differential pair of transistors and the output,

wherein the first channel is selected as active or inactive by the first plurality of selection transistors and the second channel is selected as active or inactive by the second plurality of selection transistors.
2. (Canceled)
3. (Canceled)

4. (Previously presented) The multiplexer of claim 1 which includes a first select input for activating the first channel and inactivating the second channel and a second select input for inactivating the first channel and activating the second channel.

5. (Previously presented) The multiplexer of claim 1 wherein when the first channel is inactive or when the first channel is active, a subset of the first plurality of selection transistors is turned off, and a subset of the first plurality of selection transistors is turned on.

6. (Previously presented) The multiplexer of claim 1 wherein when the second channel is inactive or when the second channel is active, a subset of the second plurality of selection transistors is turned off, and a subset of the second plurality of selection transistors is turned on.

7. (Previously presented) The multiplexer of claim 1 wherein when the first channel is selected to be active, the second channel is selected to be inactive, and when the second channel is selected to be active, the first channel is selected to be inactive.

8. (Previously presented) The multiplexer of claim 1 which further includes a first select input for activating the first channel and inactivating the second channel using a first subset of the first plurality of selection transistors and a first subset of the second plurality of selection transistors, and a second select input for inactivating the first channel and activating the second channel using a second subset of the second plurality of selection transistors and a second subset of the first plurality of selection transistors.

9. (Currently amended) A multiplexer comprising:

a first input;

a first channel including a first input differential amplifier coupled to the first input,

and a first plurality of selection transistors coupled to the first input differential amplifier;

a second input;

a second channel including a second input differential amplifier coupled to the second input, and a second plurality of selection transistors coupled to the second input differential amplifier; and

an output coupled to the first and second plurality of selection transistors, wherein selection inputs provided to the first and second plurality of selection transistors ~~connects~~ connect either the first channel or the second channel as active for output and the other one of the first channel or second channel as inactive for output, and wherein the selection inputs include a first select input for activating the first channel and inactivating the second channel, and a second select input for inactivating the first channel and activating the second channel,

wherein a first subset of the first plurality of selection transistors is turned off and a second subset of the first plurality of selection transistors is turned on when the first channel is inactive, and wherein a first subset of the second plurality of selection transistors is turned off and a second subset of the second plurality of transistors is turned on when the second channel is inactive, wherein the first subset of the first plurality of selection transistors is directly coupled to the output, and wherein the second subset of the second plurality of selection transistors is not directly coupled to the output.

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Currently amended) The multiplexer of claim ~~12~~ 9 wherein the second subset of the second plurality of selection transistors is coupled to a positive voltage source.

14. (Currently amended) The multiplexer of claim ~~12~~ 9 wherein the first subset of the second plurality of selection transistors is directly coupled to the output, and wherein the second subset of the first plurality of selection transistors is not directly coupled to the output.

15. (Previously presented) The multiplexer of claim 14 wherein the second subset of the first plurality of selection transistors is coupled to a positive voltage source.

16. (Previously presented) The multiplexer of claim 4 wherein the first select input is inverted relative to the second select input.

17. (Previously presented) The multiplexer of claim 9 wherein the selection inputs include a first selection input provided to particular ones of the first plurality of selection transistors and to particular ones of the second plurality of selection transistors, and a second selection input provided to other ones of the first plurality of selection transistors and other ones of the second plurality of selection transistors.

18. (Previously presented) The multiplexer of claim 17 wherein the first selection input is inverted relative to the second selection input.

19. (Canceled)

20. (Canceled)